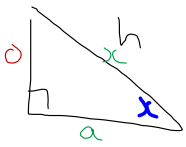
Map 4C
Trig Ratios with
ObtuseTriangles
2.2 p. 84-95

Review

Primary Trig Ratios SOH CAH TOA



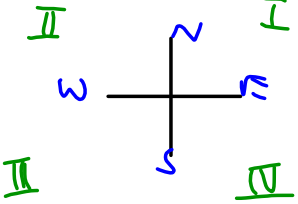
$\sin \angle x = \frac{o}{h}$

$\cos \angle x = \frac{a}{h}$

$\tan \angle x = \frac{o}{a}$

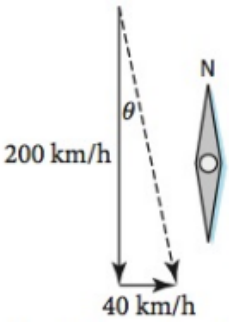
Pythagorean Theorem

$a^2 + b^2 = h^2$



Feb 2-12:30 PM

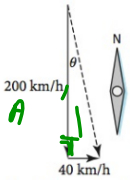
11. Randee is flying due south at a speed of 200 km/h. A wind is blowing from the west at a speed of 40 km/h, which is causing the plane to go off course. The resulting speed and direction of Randee's plane is shown by the dashed arrow.



By what angle will Randee's plane be put off of her southerly course, if she does not correct her direction to account for the wind?

Sep 22-1:03 PM

11. Randee is flying due south at a speed of 200 km/h. A wind is blowing from the west at a speed of 40 km/h, which is causing the plane to go off course. The resulting speed and direction of Randee's plane is shown by the dashed arrow.



By what angle will Randee's plane be put off of her southerly course, if she does not correct her direction to account for the wind?

$\tan\theta = \frac{40}{200}$ $\tan\theta = (0.2000)$ $\tan^{-1}(0.2) = \theta$ $\theta = 11.3°$

∴ Randee will be set off course 11° [S 11 E]

$A^2 + b^2 = c^2$

$200^2 + 40^2 = c^2$

$\sqrt{40000 + 1600} = 204.0$ km

Sep 22-1:03 PM

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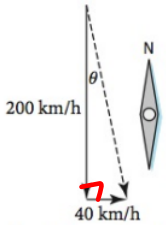

SOH CAH TOA

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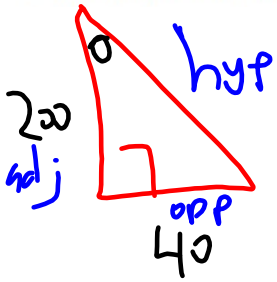

$\tan\theta = \frac{O}{A}$

$\tan\theta = \frac{40}{200}$

$\tan\theta = 0.2000$

$\theta = \tan^{-1}(0.2000)$

$\theta = 11°$

Sep 22-1:03 PM

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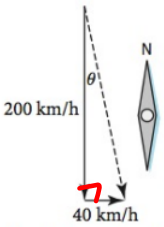

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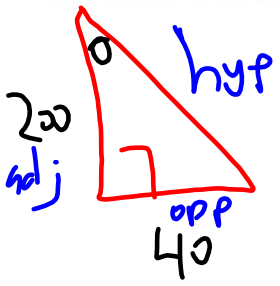


$\tan\theta = \frac{O}{A}$

$\tan\theta = \frac{40}{200}$

$\tan\theta = 0.2000$

$\theta = \tan^{-1}(0.2000)$

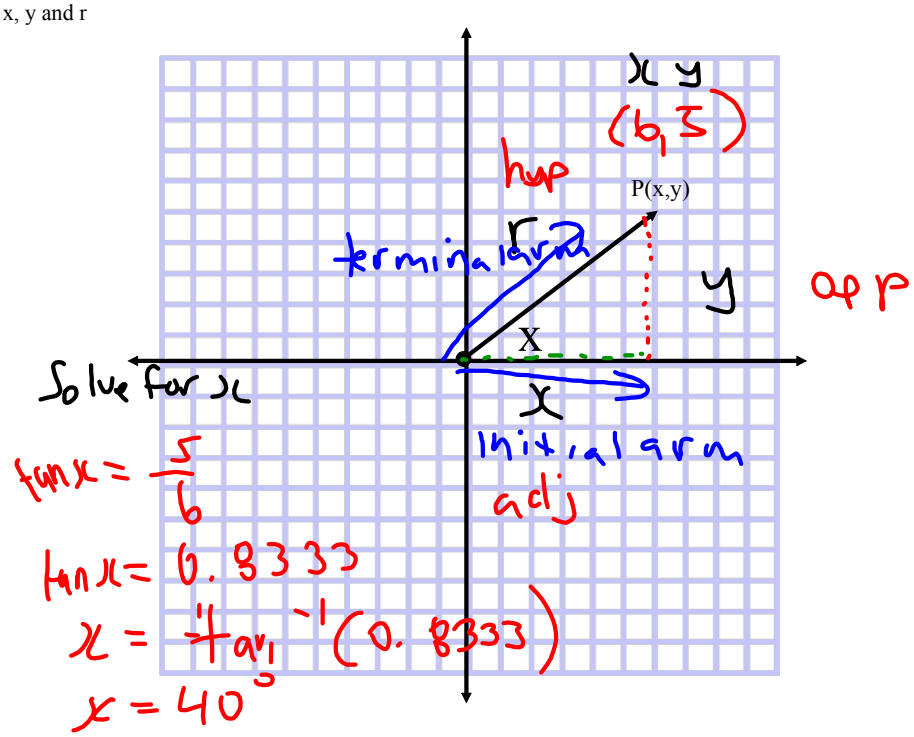
$\theta = 11°$

Sep 22-1:03 PM

Label

Terminal Arm
Initial Arm
x, y and r

Trig Ratios with Obtuse Triangles



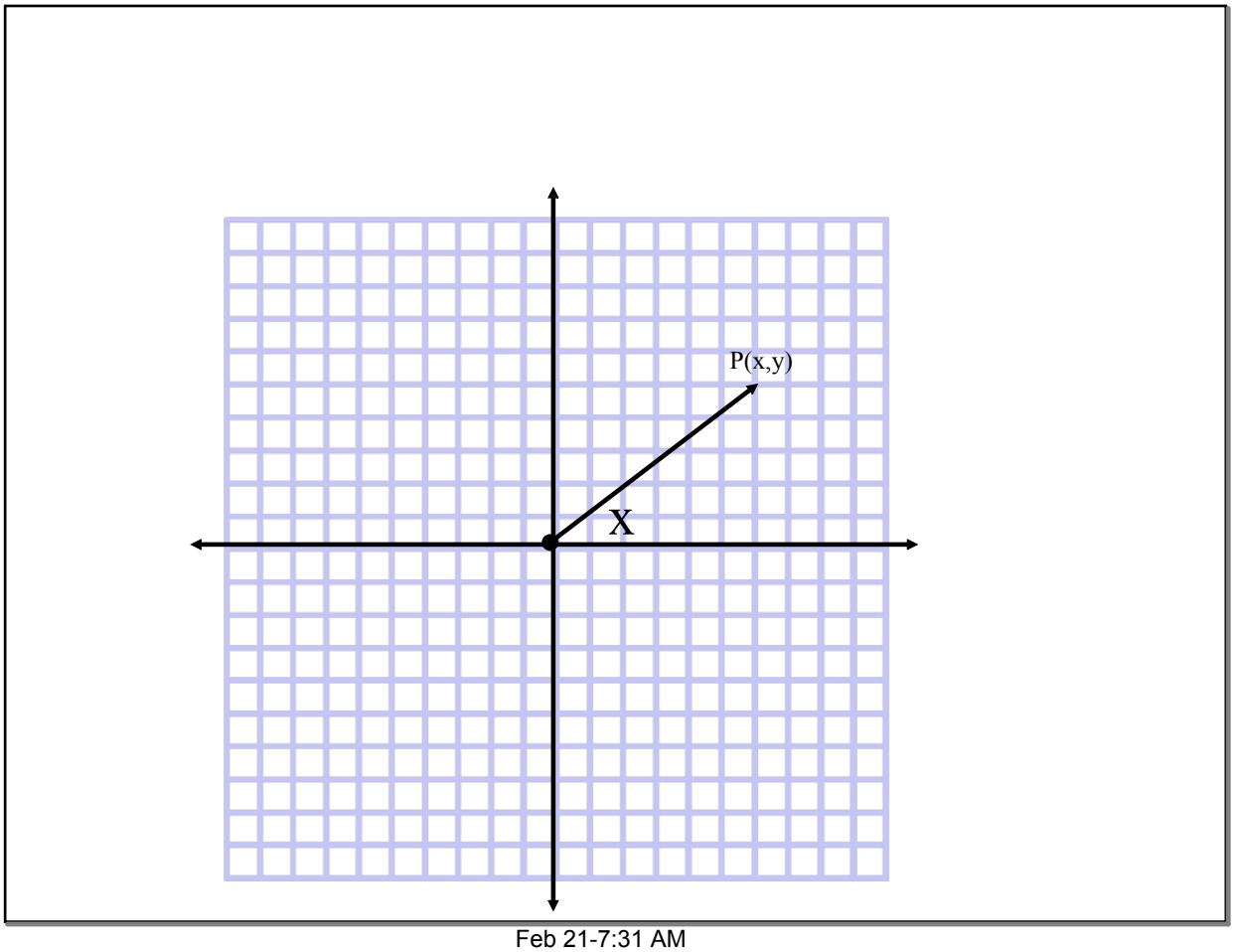
$\tan x = \frac{5}{6}$

$\tan x = 0.8333$

$x = \tan^{-1}(0.8333)$

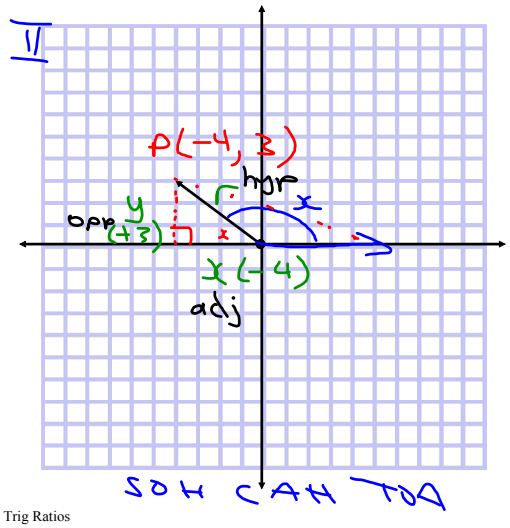
$x = 40°$

Feb 21-7:31 AM



Feb 21-7:31 AM

Label on Obtuse Angle



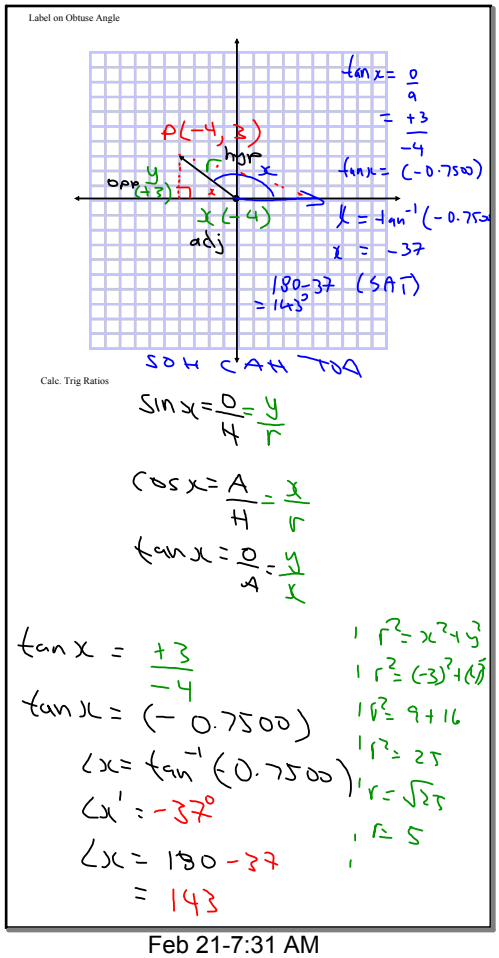
Calc. Trig Ratios

$\sin x = \frac{O}{H} = \frac{y}{r}$

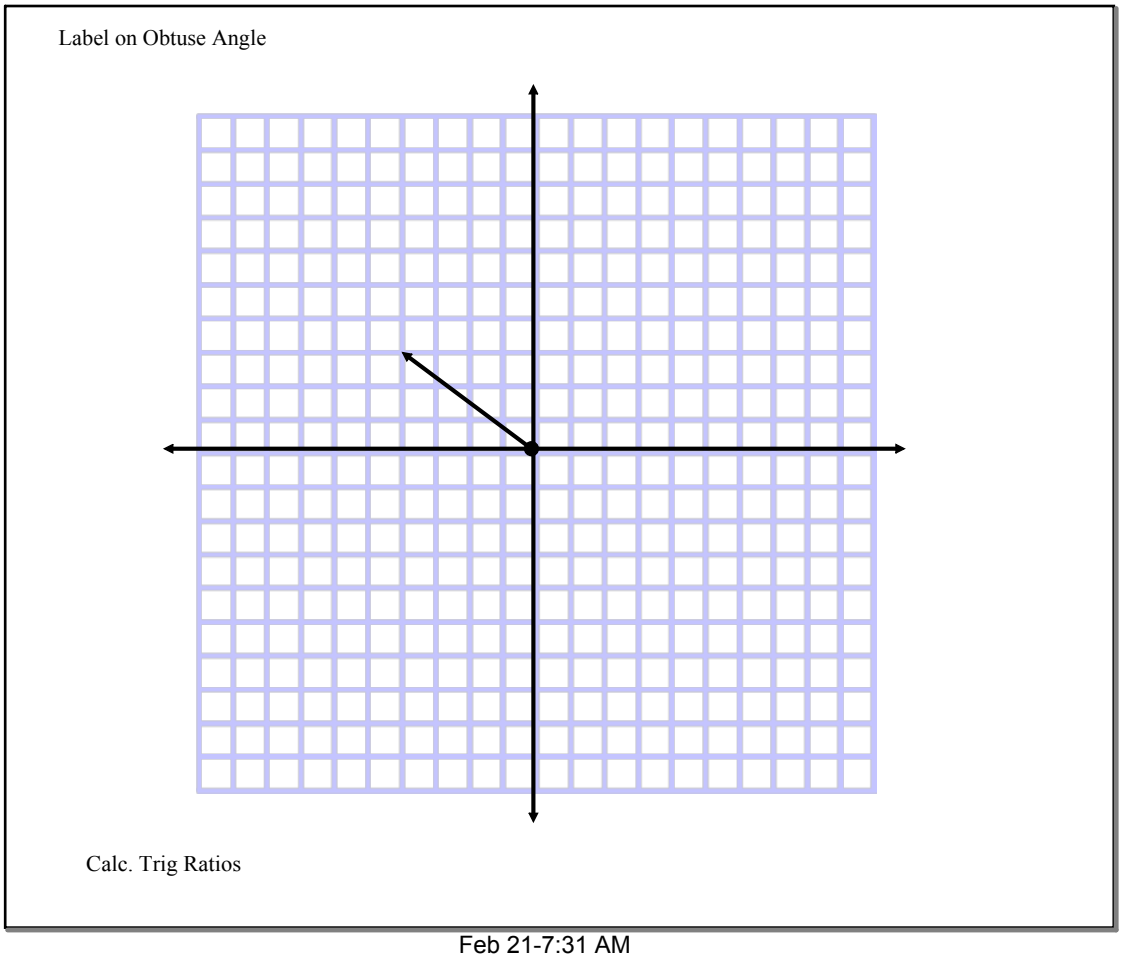
$\cos x = \frac{A}{H} = \frac{x}{r}$

$\tan x = \frac{O}{A} = \frac{y}{x}$

Feb 21-7:31 AM

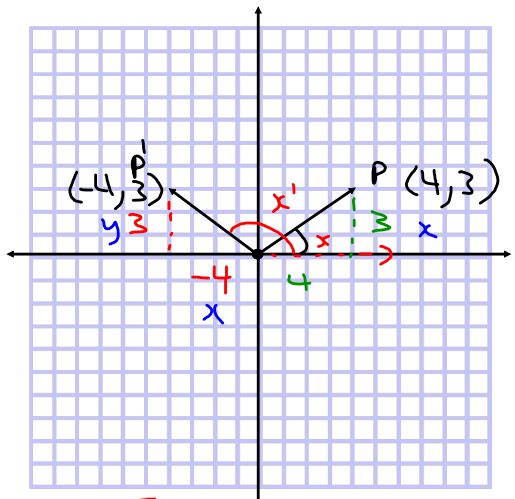


Feb 21-7:31 AM



Feb 21-7:31 AM

Label on Obtuse and Acute Angle Triangles and Compare



Calc. Trig Ratios

SOH CAH TOA
y/r x/r y/x

$\tan x = \frac{3}{4}$

$\tan x = (0.7500)$

$\angle x = \tan^{-1}(0.7500)$

$\angle x = 37^\circ$

$\tan x' = \frac{3}{-4}$

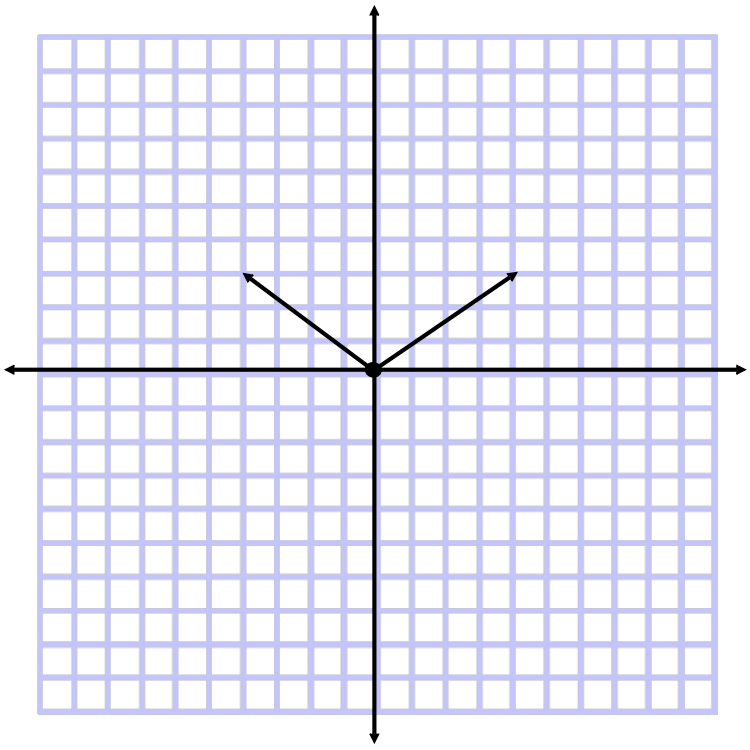
$\tan x' = (0.7500)$

$x' = \tan^{-1}(-0.7500)$

$x' = -37^\circ$

Feb 21-7:31 AM

Label on Obtuse and Acute Angle Triangles and Compare



Calc. Trig Ratios

Feb 21-7:31 AM

Obtuse

Key Concepts

- an angle in standard position is measured counterclockwise about the origin
- primary trig ratios of an angle from standard position are

$\sin x = y/r$, $\cos x = x/r$, $\tan x = y/x$ where $r2 = \sqrt{x2 + y2}$

- primary trig ratios are positive
- obtuse angle trig ratios i.e cos and tan are negative, sin x is positive

Feb 21-7:20 AM

Hmk p. 93-95
q. 4-6,7*& 8*, 10 & 11

Feb 14-2:53 PM